VOLUME IX NUMBER 9

THE ELEMENTARY SCHOOL TEACHER

MAY, 1909

GETTING OUR BEARINGS ON INDUSTRIAL EDUCATION

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The industrial-education craft has steered a devious course during her eventful voyage. Twenty-five years ago she was flying the flag of manual training at her main mast. Against headwinds—through heavy seas—sometimes apparently with faulty chart and compass, her pilots have brought her through—somewhat battered and scarred but still seaworthy. She has lately been dry-docked, scraped, and painted; equipped with twin propellers; provided with a new figure-head; renamed; compass adjusted; and now flies the pennant of industrial education.

That she is the same old craft will be evident, however, to anyone who will read the specifications of the old vessel and compare them with those of the repaired and re-christened ship that has so recently and so gallantly put out to sea. To one accustomed to the uncertainties of tacking against headwinds in a sailing vessel, and of drifting idly on a calm sea, waiting for favoring breezes, there seems to be magic in the resistless headway that our ship is making under the driving force of her engines. If only her course be true and her charts trustworthy, there can be little doubt that the newly launched craft will bring us surely and speedily toward our home port. The perils of the sea are numerous, however, and not always to be anticipated. Like the watchful mariner, we should seize every opportunity

for determining our exact position by getting our bearings on a light, a point of land, a barren rock, a fixed star, or the sun itself.

Without pursuing further this fanciful figure, let us examine directly some of the bearings of the present national agitation for industrial education. It would certainly be hazardous to make any single statement designed to give the present attitude of the country at large toward industrial education and manual training. It is possible, nevertheless, for us to find some fairly definite indications of a few tendencies and to examine very briefly the significance of these tendencies in the general educational movement of today.

The past few years have seen the organization of divisions of industrial education within state education departments; the establishment of independent commissions on industrial education, of national and state associations for the promotion of industrial education, and of a national commission on country life. The need of industrial education has been emphasized again and again by the United States Commissioner of Education, by many leading state and city superintendents of schools, by the governors of numerous states, and by the President of the United States in at least two of his messages. It has been vigorously urged by manufacturers' associations, labor organizations, associations for civic betterment, charity organizations, and political parties. State legislatures have passed favorable laws and periodical publications have given to the industrial education propaganda a degree of publicity and support that they have rarely accorded any similar public movement. Teachers' associations have given increasingly large attention to the question. The manual training department of the National Education Association has given over its programmes almost wholly to its consideration and a new department of technical education has been organized. The general programmes of the Association and of its department of superintendence have given much time to the subject and many speakers of high ability have discussed its social, economic, and educational bearing. In short, we have had almost all of the possible accompaniments of a system of

industrial education except industrial schools; and doubtless we shall have a plentiful supply of these in the very near future.

There are, in the United States, about one hundred and fifty schools of secondary grade which may properly be designated manual-training or industrial-training schools. Of this number, thirty are public high schools and are known variously as manual-training high schools, technical high schools, and mechanic-arts high schools. Most of them give from five to nine hours a week to manual, technical, and industrial instruction. Some give as little as four hours, and a few as much as twelve hours a week to such instruction. Six of the thirty schools report that they give all of their time to technical, industrial, and trade instruction; which indicates that these schools may be dealing in a serious way with genuine vocational problems and may be called industrial schools in the sense attached to that term in current discussion. In general, however, it may be said that high schools of the manual-training type are dominated by the same purpose that controls ordinary high schools and that this purpose is distinctly not vocational, unless we include attendance upon college among the vocations. It may confidently be asserted, furthermore, that with the exception of the new Cleveland high school and possibly one other, there does not exist today in the United States a public secondary school that with strict accuracy should be termed a technical high school.

Of the thirteen hundred city-school systems in the United States, almost exactly one-half have introduced, somewhere in their curricula, various forms of constructive activity known as handwork or manual training. In about one hundred and fifty of these cases handwork extends through all of the grades of the elementary school, and in about one hundred cases it is given in the high schools. In some cases handwork is given in the kindergarten only; and between this extreme and the other extreme of manual training in every grade, there are all possible differences in practice.

While on the whole, the manual-training movement has had a salutary effect in directing attention to the right relation between theory and practice in education, it is nevertheless true

that handwork in the schools is still mainly abstract, isolated, impractical, and unsocial in character. It is very largely lacking in rational content and therefore in educational worth. As "busy work" and relaxation, it no doubt performs a function of some value. The very name "manual training," however, is suggestive of a discredited psychology. With a few gratifying exceptions, handwork is a fungus growth on an otherwise ill-proportioned and misshapen curriculum that needs not so much to be pruned and trained as to be uprooted and replaced by a more vigorous and more productive plant.

To put the matter positively, the great educational need at this point is for us to recognize in our practice what many of us profess to accept in theory: that constructive handwork is an indispensable means of developing intelligent ideas, sympathetic appreciation, and executive efficiency in relation to the industrial side of human society. "Manual training," in other words, should be replaced by intelligent study of the constructive, industrial factors of social progress.

It should be noted that the kind of study here proposed might as properly be termed "industrial education," as the training for skill in industrial vocations that is everywhere now being so vigorously demanded. It may indeed be doubted whether without a basis such as that suggested, industrial education can be saved from the isolation, the unsocial, and even anti-social tendencies with which the present curricula have been charged.

A few weeks ago, I was inspecting one of the largest manufacturing establishments in New York state, which had recently organized a school for apprentices; provided it with a thoroughly modern equipment; and placed in charge a well-educated man of high ideals and practical ability. Here, I thought, I had found an enterprise that might have something to teach the schools concerning their effort to meet concrete social needs. The master-mechanic to whose initiative this school was due told me, however, that he had serious doubt as to the practical value of his apprentice school. He thought he would direct the teacher to use the machines for demonstration purposes only, as the boys spent too much time "figuring out how to get a piece

of work set up and how to get the thing done." "These boys," he said, "will work all their lives for our company and we want them to do things our way. We don't want the boys to draw; we want them to read drawings. We don't want them to figure; we want them to read figures. We don't want them to boss; we want them to be bossed." And he might have added, we don't want them to think but to become automatic machines.

The objection of this master-mechanic was to any system of training that develops initiative and independence. While his view is certainly not that of the most far-sighted manufacturers who are joining in the cry for industrial education, his attitude does represent a somewhat common tendency to regard industrial efficiency as the sole standard by which to measure the value of industrial education. There is need for a resolute stand against every attempt to exploit the efficiency of the rank and file in the interest of private greed. Education must never lend itself to any movement that ignores the fundamental truth that to make a life is of greater consequence than to make a living. By every proper means, education must seek to rectify the standards of industry itself and to promote a genuinely social consciousness among our people.

The ideals of industrial, as of all other forms of education, can be stated then only in terms of social intelligence, social appreciation, and social service. Any attempt to isolate completely the problems of industrial education must accordingly fail; for society is essentially organic and every truly social problem is shot through with a thousand threads of social complexity. In all of its essential qualities therefore, industrial education, in common with education of every other type, must conform to the great underlying needs of men and women composing a human society.

To say that industrial education introduces no fundamentally new principles, and that every important principle applicable to industrial education applies also to education in all of its aspects, is not however to overlook the necessity of working out in detail the application of such principles to the peculiar requirements of those boys and girls who are looking toward industrial voca-

tions. A few general ideas will here be suggested which should help us to keep our bearings in making this application.

First, it is important that we make a clear distinction between elementary and secondary education. Neither in our thought nor in our practice have we thus far drawn this distinction with sufficient clearness, but have merely assumed that during the period of early adolescence the minds of boys and girls are sufficiently "mature" to warrant them in entering upon the study of Latin, algebra, geometry, and the various other subjects prescribed for admission to American colleges. From this point of view, elementary education is that uniform régime imposed upon all boys and girls who have not yet entered upon a college-preparatory course. I am sometimes disposed to think that if we had the courage to face the truth we should be compelled to admit that the present function of the elementary school is to eliminate 65 per cent. of its pupils so that the secondary schools shall not be overcrowded; and that the function of the latter, including the manual-training high schools, is to eliminate all of the residue who do not readily run into the mold handed out by the colleges.

I would propose the following as a rational as opposed to a purely formal distinction between elementary and secondary education. In the early stages of mental and social development, the similarities of children, for educational purposes, are more significant than their dissimilarities. This is the period of elementary education, when children may properly participate in a relatively uniform régime. When differences in taste, capacities, and ambitions become more significant for education than likenesses, whatever may be the arbitrary and external organization of education, the secondary stage in the development of boys and girls has *de facto* begun. Obviously this period begins at a much earlier point than is recognized in our present educational practice. The difference between elementary and secondary development is thus primarily a matter of mental and moral variation; not a mere matter of convenient arrangement. Differences in abilities and in interests will always demand corresponding variations in form of activity. If we persist in our inexcusable failure

to provide such variations during the last years of our so-called elementary course, when individual differences appear with unmistakable and increasing force, we may expect boys and girls to continue as they now do to seek in the more tolerable occupations of street, factory, shop, office, and mercantile house, the kind of interests for which they feel an instinctive though vaguely defined need.

It should be clear, then, that industrial education is properly but one constituent of an organic *system* of secondary education. Like the various other members of such a system, industrial schools should be designed to meet the specific needs of a well-defined group of children who, by reason of common interests, common capacities, and common opportunities, are looking toward a common vocation.

In the current discussion of industrial education, it is surprising that no more strenuous protest has been made against the early specialization that is clearly involved in the proposed programme. At the risk of seeming to set up a man of straw, we shall notice very briefly some important considerations in this connection.

The arguments against "early specialization" were first brought forward with great vehemence in the discussion of the "elective system" in colleges that loomed up so large on the educational horizon a generation ago. They next appeared in the debate concerning the introduction of elective courses into our high schools. While the ultimate outcome of this later contest is no longer doubtful, the voice of protest has not yet been altogether quieted. The old familiar arguments are still urged against wider opportunity and greater freedom for pupils in high schools. We may expect these same arguments to be directed in turn against every effort to extend the elective system backward to the logical beginning of the secondary stage of education.

The outcome of the struggle between rigid prescription and free election must eventually be the same in all three of these fields; for the conflict is really one and not three. The question is whether human beings who differ widely in native gifts and

acquired tendencies shall be forced to pursue a single conventional course of training, or have the privilege of choosing a course that will equip them not only for the worthy use of their leisure but for the intelligent pursuit of their vocations. Life itself is from the beginning an elective process—each individual selecting from the complex whole of experience those elements that accord with his native and acquired interests, and rejecting those elements that serve no useful purpose in his life.

In a very real sense then, it is a condition and not a theory that confronts us; for an elective system is already firmly established even in our elementary education. One of the alternatives open to a pupil is to continue in the single course offered by the schools; the other is to withdraw from school and, without adequate preparation, to enter at once upon some low-grade vocational pursuit that offers little educational advantage and a meager wage. The question is not, therefore, whether we shall extend the privilege of election to pupils now in the elementary schools; but whether, by introducing courses for industrial and domestic training within the school, we shall widen the field within which election may be made.

A rational system of secondary education, furthermore, must provide not only for the training of special capacities but for making children conscious of their individual abilities. One of the most serious weaknesses of the present organization of education is that the range of experience provided for in the schools is so narrow that many of the latent powers of children are not stimulated to activity. In order that a child may be placed in position to make proper choice of a school course and ultimately of a vocation, it is often essential that means be taken to ascertain what are his native capacities upon which success in every undertaking must very largely depend. These capacities cannot always be determined with reference merely to the desires of parents and of pupils or to such general advice as teachers and principals of schools are commonly qualified to give. Teachers must be equipped to recognize, to search for, and to interpret the evidences of special aptitude. This will necessitate a fuller recognition than is now given to the influence of heredity upon mental

and moral traits, and a more vital and practical view of genetic psychology than is yet widely prevalent.

To summarize briefly, then, we have evidences of a widespread and almost unprecedented demand for industrial education; and this demand is but one aspect of the educational unrest that is now so widely felt. While manual training has done much to vitalize the educational thought of the country, it is still largely isolated and unsocial in practice and should be replaced by a more intelligent study of the industrial element in social life. There is a noticeable tendency to set up industrial efficiency as the final standard and to look upon industrial education as a means of exploiting this efficiency in the interest of the private gain of employers of labor. Such tendencies must be steadily resisted by leaders in education.

Industrial education properly constitutes an organic part of a rational system of secondary education which should meet the specific needs of various groups of children who, on account of differing tastes and capacities, must look toward widely different vocations. Such a system will make it necessary for children, with the guidance of parents and teachers, to make choice of a career at a much earlier age than is now regarded by many as prudent. Even under existing conditions, however, children are obliged to choose between continuing in the uniform course provided by the elementary school, and entering upon vocational pursuits without adequate preparation. One of the main functions of secondary education should be to make children aware of their special aptitudes and thus to make it possible for them to choose wisely the vocations for which by nature they are best adapted.

The whole argument for vocational training is of course open to the familiar charge that it is basely utilitarian. As to the charge that it is utilitarian, why should not the answer be what the common law terms "confession and avoidance"? Such training *is* utilitarian; but why *basely* so? Most men devote more than half of their waking hours to their vocations. Are their lives necessarily on that account basely utilitarian? Our war for independence had its origin in a question of taxation.

Was it for that reason a basely utilitarian struggle for selfish ends? Almost every great national policy involves some matter of industry or commerce. Is our national life therefore unworthy of our loyal affection? The intellectual and moral progress of the race has always been in large measure dependent upon material and commercial prosperity. Are the achievements of the human spirit on that account insignificant or base? As a people we profess a belief in the dignity of work. Shall we hesitate to exemplify our belief by making it possible for every man to find his work and in his work to find a worthy means of enlarging and completing his life?

MEDICAL INSPECTION IN ENGLISH PRIMARY SCHOOLS

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Portents are not lacking which augur a complete revolution of the system which governs the primary schools of England.

When the industrial revolution of the eighteenth century hurled down the ancient supremacy of the manual crafts, reducing the sturdy workers of England to dependence upon the whirling machinery of the factory or workshop their position was analogous to that of a man who enters life with capital intact. The markets of the world were open to their products; the physical capacity of the workers to produce was boundless; work was plentiful. Yeoman farmers, no longer able to coax subsistence from the soil, sold their holdings and rushed to the centers of industry; the fishermen of Cornwall and Devon with their families flocked to the towns of Lancashire and Yorkshire where work at fabulous wages could be secured in abundance. Even the children could earn, untrammeled by inconvenient restrictions; and the nation spent recklessly of its inherited physical capital.

Then followed that period of commercial expansion the like of which has only been equaled in the development of the New World. The desolate wastes of the North became busy hives of industry; first the factory, then the houses, then the towns.

Coal fields, iron foundries, ship-building yards sprang up as though by magic; canals, new roads, and railways quickly connected the various centers, so that whole districts became in effect large towns. Fortunes were made freely, and if lives were lost among the busy wheels of industrial strife, if the young and helpless went down, if the workers began to age prematurely and to become marked with the deep-scored lines which stamp an impress upon the third and fourth generations, what mattered

it so long as fresh supplies of bone and muscle rushed eagerly in from the country?

When improved methods of work were required there sprang up a demand for education which resulted in the passage of the act of 1870. That the perspective of its framers was limited almost solely to the training of the mind, ignoring the problem of physical development, was unfortunate; that the stage of mental development should be assessed and paid for, after the manner of the buyer in a great cotton or woolen concern, was a calamity the consequences of which are yet being bitterly felt.

Despite high rates of wages and the wider knowledge of healthy conditions of living which prevail today as compared with those of yesterday nearly all the great centers of population are faced with the presence of large numbers of unemployable men. While the workhouses are full, 5 per cent. of the present population being paupers, lunacy is increasing at an appalling rate. The terrible effects of town life are illustrated by the significant fact that the percentage of pauperism in London exceeds seven; and that such things should be in face of the enormous number of charitable organizations which are actively at work indicates the gravity of the problem which confronts the English nation.

Of the various social questions having for their object the elimination of physical deterioration the educationist is naturally chiefly interested in those which concern the welfare of the child.

Since the abolition of the system of payment by results, increasing attention has been paid by the Board of Education to the policy of improving the physical development of school children, especially in recent years. Provision must now be made in all school time-tables for a recreation interval during morning and afternoon sessions; in infant schools this interval may be prolonged, and lessons in all departments must be so arranged as to avoid any risk of undue fatigue in the pupils.

For very many years an elaborate system of military drill was encouraged in the schools, and this has recently been elaborated into a scheme more consonant with modern ideas of physical development. Every primary-school pupil is now taught to

breathe correctly, and, if the existing scheme be persisted in, there should in time be a considerable diminution in the number of mouth-breathing children.

The inspectors of the Board have effected vast changes in the structural arrangements of schools by means of recommendations to managers in their annual reports; many schools which are condemned today would have been regarded as thoroughly satisfactory only a few years ago.

The splendid work of the inspectors in this department has been so gradually wrought that it is frequently overlooked altogether by prominent educationists. Not only is the practical hygiene of the school strictly supervised, but courses of well-graded instruction in personal hygiene are organized for the benefit of the pupils in attendance. There is, too, the provision in the Primary-School Code which sanctions gardening as an ordinary subject of the curriculum, and one which is being widely taken up in suburban and rural schools. Outdoor teaching is also sanctioned when suitable schemes are submitted by teachers, in all schools. The Board's encouragement of outdoor teaching has recently been extended by the inclusion of organized games in the general curriculum. The teaching of special subjects, as manual work for boys, and cookery and laundry work for girls, is also recognized by the Board by the payment of special grants.

It would appear therefore that the policy of the Board of Education, as distinct from that of the general government, is strongly in favor of securing sound physical development among the children in so far as this may be secured without interfering with the purely educational work of the schools—*vide Suggestions to Educationists:* "The duty of safeguarding the health of children of school age is only in a limited degree a duty of the school."

Had the present policy of the Board been inaugurated with the introduction of the industrial revolution it is possible that the problem of physical degeneracy would not have arisen in its present urgent form. The terrible tales told by the recruiting returns of disease and low vitality, in conjunction with a steady and alarming decrease in the national birth rate, have caused

serious disquiet among all active workers on public administrative bodies. Earnest educationists have brought forward the whole question as it concerns the rising generation. "Begin with the child," they argue; "once given a fair start he will attain sound physical development and perform his share in the world's work."

In the last annual report of the London Education Committee it was pointed out that a process of selection had been introduced by the establishment of special schools for defective children. The process was carried out under the supervision of skilled medical advice and for the first time there was systematic medical inspection of a section of primary-school children. In order adequately to assess the value of the special work of schools, a medical specialist was appointed by the Board of Education. It was soon ascertained that children classed as defective were of many types; there were those so closely related to idiocy that while they could derive no benefit from the ordinary curriculum of special schools they greatly impeded the progress of those who could. For such cases the policy of permanent segregation under healthy conditions is being actively advocated. Other defectives were discovered to be of the epileptic class, and for these also separate schools are advised. Mental defect was often found to be the result of parental neglect or ignorance, and after simple surgical treatment was administered the defect gradually disappeared.

When medical officers were more generally appointed by the progressive educational areas for the purpose of inspecting cases for special schools it was discovered that the physical condition of school children throughout the country was marked in many respects by grave weakness; and in order that all the children under their control might be subjected to medical examination, additional doctors were appointed. As a result it became a statutory obligation on education committees to provide medical inspection for *all* children, on and after January 1, 1908. Many education committees as yet have not decided to take up the question thoroughly on grounds of expense, although children who suffer from grave defects of sight and hearing, if neglected,

usually develop into the unemployable men and women whose ultimate destination is the poorhouse; so that the cost of initial neglect falls very heavily upon the general community.

It may prove interesting to record the experience of some of the pioneer education authorities in the field of medical inspection of school children.

One of the most comprehensive schemes is that drawn up by the committee of the Govan School Board. Ten medical officers are employed and the average number of children under the charge of each is about 3,000. The duties of officers are to advise the Board as to the ventilation, heating, lighting, and cleanliness of the schools; to inspect periodically all school lavatories and sanitary arrangements and to report to the headmaster any defects discovered; on receiving notice of an outbreak of infectious disease among the pupils attending any school the officers are to inquire and take such action as may be necessary to prevent infection, for which purpose they must co-operate with the Medical Officer of Health for the district; special schools and classes are to be reported on twice a year and the officers are to give the necessary certificates of admission to defective children seeking entry to such schools. They are to examine all scholars on admission and twice thereafter during their school life, and for the purpose of these examinations the schools are to be visited as often as may be necessary, but at least once a fortnight; they are to make reports on children submitted for examination by headmasters and to give such directions as may be required; they are to supervise such systematic measurements of heights and weights as the Board shall approve, inspect the physical exercises given in the schools, and medically examine candidates appointed to positions under the Board; finally they are by lecture, demonstration, or otherwise to instruct teachers in the methods of recognizing the common ailments and defects of school children, in the practice of first aid for school accidents, in the general hygiene of the school, and in the physiological principles that underlie physical training.

The teachers render assistance to the medical officers in filling up those parts of the Health Schedule, one of which is filled up

for each child examined, relating to height, weight, chest measurement, etc. When a child is found to be suffering from any disease or defect, the medical officer informs the parent of the nature of the malady and urges upon him the necessity of placing the child under the care of a doctor. Medical or surgical treatment is no part of the medical officer's duty.

Although the School Board of Glasgow has not yet made arrangements for the medical inspection of all the children attending its schools the services of four special doctors have been employed for (1) testing the eyesight of the children, (2) examining scholars for admission to special schools, (3) examining the blind and the deaf mutes, (4) examining scholars for admission to physically defective classes, and for visiting and reporting on children who are absent from school on account of illness.

Under the supervision of Dr. Wright Thomson the eyesight of 52,493 children was recently tested, of whom 18,565 or 35 per cent. were found to be below the normal standard, and 11,209 or 21 per cent. had ocular defects. The proportion of these cases was highest in the poor and closely built districts and in old schools, and was lowest in the better-class schools and in those near the city outskirts. Dr. Thomson points out that defective vision, apart from ocular defect, seems to be due to want of training of the eyes for distant objects and partly to exhaustion of the eyes induced by working in a bad light. He strongly advises teachers to train the eyes of children for long vision by the introduction of competitive games involving the recognition of small objects at a distance of 20 feet or more.

The Manchester Education Committee has for many years taken an active interest in the treatment of backward and defective children. In addition to several special schools staffed by teachers possessing the highest educational qualifications, a residential school for cripples has been established in a spacious mansion surrounded by wide stretches of well-wooded country at Swinton. Here the children are nursed back to health, and during the process they receive instruction under ideal conditions.

On suitable days the pupils are taught on the lawn or in the shady spots which abound.

Mention must also be made of the summer school worked by the same authority. This institution is situated at Mobberley in the open country; and during the spring, summer, and autumn months, boys and girls from Manchester schools visit the country for a fortnight in charge of their teacher. Instruction of a suitable nature is given and there are long walks into the surrounding country. The parents of the visiting scholars contribute toward the expense of the visit and the success of the experiment has been so pronounced that the country school is now regarded as a permanent educational asset.

Quite recently several additional medical officers have been appointed to Manchester schools and the work of medical inspection is about to be organized upon a thoroughly comprehensive plan. Many of the more serious cases of mental defect and epilepsy in Manchester are transferred to the permanent home for the feeble-minded at Warford Hall, and the David Lewis Colony for Epileptics.

In Liverpool where the work of medical inspection is in the experimental stage there are three doctors for 133,000 children at the present time, but only children recently admitted, those about to leave school, and special cases are medically examined.

The Birmingham authorities have appointed three doctors with nurses to assist in the weighing, measuring, etc., of the children. There is a thorough medical examination with a high standard, equal to that adopted by the best insurance companies. A file index of all cases requiring supervision is kept for reference.

The splendid work done by Dr. James Kerr and his colleagues in the London County Council schools is only slightly indicated in the last report[1] which is worthy of deep study from every educationist. In clear statistical form, the various ills from which school children suffer are set forth. For example it was discovered that only 20 of 700 infants examined had sound teeth;

[1] *London County Council, Minutes of Proceedings* (No. 33), December, 1908. London: P. S. King & Son, Gt. Smith St., Westminster, S. W. $0.06.

in two secondary schools 62 per cent. of the pupils had two or more defective teeth, and in the training colleges 43 per cent. were returned as having dental defects. The urgency of prompt remedial treatment is illustrated by the statement that if the dental cases alone were taken in hand all the hospitals in London could not provide for one-tenth of the afflicted children, and a similar lack of accommodation is shown for the treatment of eye and ear defects. For absence from school attendance through ringworm alone, £5,650 is lost annually in grants.

The whole report was submitted to a special subcommittee for further consideration with the result that the London County Council Education Committee has now recommended the establishment of school clinics where common diseases of the eye, ear, teeth, and skin may receive immediate medical treatment; and convenient centers are about to be erected.

In this respect London has given a notable lead to the rest of the country, for the introduction of school clinics can scarcely fail to mark an epoch in educational progress. For in England, after generations of aimless wandering in the wilderness of social and industrial conflict, it would appear at last to be clearly established that all national progress and educational vitality are dependent upon the physical fitness of the nation's children.

A LANGUAGE-EXERCISE IN DRAMATIZATION

EMMA SIEBEL

No material presented for a language-exercise and no form of language-work has awakened in the children a more intense interest or provoked them to greater effort than have the stories of the gods and the Trojan war, and especially the writing of the play which follows.

The exercise is classwork, and all the children are represented, some contributing more than others; all, however, working with earnestness and each doing his part.

There was quite a heated discussion as to the subject to be chosen—some favoring the "Wedding Feast," others contending that that would be too simple, that it would only necessitate allowing the characters to say "in their own words" what the story had told them. They wished to "make up" their play, and the suggestion that we write on "Laomedon's Broken Promises," that being a story from which "a good lesson could be learned," carried the day. I had some misgivings as to the outcome, but would not discourage their enthusiastic effort.

The story of Cinderella, so familiar to all, was acted out to give them the "play-idea" and to familiarize them with the terms "exit," "enter," "act," "scene," "speech," "action," etc. We then spent one lesson "practicing," as they said, "the language of the gods," and another in changing sentences, "to make them sound more poetical."

The suggestion to substitute "Persons of the Play" for "Cast of Characters" came from a little girl who thought that "we are only children, and we want it to be all our own." They then selected the characters needed, deciding that we could easily add others should we have need of them.

They wished to know why Neptune and Apollo had been banished to earth, and when the stories had been told them, they unanimously decided that Mt. Olympus with its "golden palaces," and Jupiter in the act of banishing the offending gods would be a beautiful and effective scene with which to open the play. In

this scene there was quite a difference of opinion as to Apollo's entering with "bowed head," some insisting that he would feel that his offense against Jupiter was justified. It was finally decided, however, to let him enter in this way, as, being so beautiful, it would "make every one feel sorry for him." "He should go out," said one, "playing the lyre, as he is the god of music." "Oh, no," said another, "do you think he would feel like playing?" "Then," suggested a third, "let us say, 'softly playing the lyre,' as soft, sad music would express his grief for his son and sadness because he had to leave Olympus."

The second scene, they decided, must be the meeting of Neptune and Laomedon, as the audience must hear Laomedon make the promise which he afterward breaks.

The mountain-side with Neptune at work was the best suggestion offered for scene iii, and it immediately found favor. They were quick to see that it would offer an opportunity to show in Neptune's first speech that he was sorry for what he had done, and that "we must always pay in some way when we are not satisfied with what we have." This scene afforded them great pleasure, and they made special effort to have the language "poetical" as there were "no mortals, only gods speaking."

There was no difference of opinion as to scene iv; all agreed that it must represent the completed walls and the Scaean Gate. "That," thought one of the boys, "will be a beautiful scene, and a good place for Laomedon and the gods to meet, when they ask for their reward." Some thought that Laomedon might really have felt that Neptune did not deserve the reward as he had been helped by Apollo, but the great majority scornfully rejected this, insisting that "when anyone has made a promise, it must be kept, there must be no excuses." All thought, however, that Laomedon must have feared to refuse the god outright, and that "people of that kind always do try to make excuses."

Act II, scene i, was the most difficult part of the work. The first part of it was developed in this way:

"What shall be our next scene?"

"It should show the sea-shore, a crowd of people and Laomedon's daughter ready for the sacrifice."

"Why should this be represented?"

"It will be a beautiful scene." "I think it will show the Trojans how Laomedon is to be punished." "It will be the best place to let Laomedon make his promise to Hercules."

"Would what happens in this scene follow shortly after what happened in the last?"

"No, this would be years after."

"How do you know this?"

"The story tells us that the monster devoured one maiden a year, and that at last the lot fell on Hesione, Laomedon's beautiful daughter."

"How will the audience know this, since they do not know the story?"

"We will say at the beginning of the scene, 'Some years after' (later)."

"What division can we make here, then, in the play?"

"This can be the beginning of the second act."

"Who will be the persons in this scene?"

"Laomedon, because he will want to be near his daughter to save her if he can." "Hesione must be there." "There must be many people, because all the Trojans know of it." "The dragon must be there, too."

"Why will you have the dragon?"

"He must come up from the sea to devour the maiden."

"Would you like to see this?"

"Oh, no!"

"Would the audience enjoy it?"

"I think not, but how would they know about the dragon if they do not see him?"

"Who can tell us what to do?"

"We can have him behind the curtain, or only pretend to have him, and some one can tell the audience."

"Will the player tell it to the audience?"

"No, people on the stage only talk to one another."

"To whom can the story be told—to one of the Trojans?"

"No, they all know of it." "It must be told to a stranger."

"Will it be a stranger from one of the places near Troy?"

"No, he should come from a far-away country."

"Who, then, must be added to this scene and to the 'Persons of the Play?'"

"We must take away the dragon and put in the stranger."

"Will merely the word 'stranger' do?"

"I think it would sound well to say, 'A stranger from a foreign shore.'"

"The stranger" was accordingly added, and the "dragon" regretfully dropped. Having overcome this difficulty, the "Trojan's" story was easily composed, and the climax of the scene, "Honor to great Hercules," etc., gave great satisfaction.

In Act II, scene ii, the sympathy of some went out to Lao-

medon. They thought he would really have cause to fear Jupiter's anger were he to give up the steeds, and suggested that Hesione's hand might be offered to Hercules as a fitting reward.

Act II, scene iii, again presented the problem of telling the audience of a harrowing scene which could not be presented. They had learned to solve the problem, however, and the suggestion was soon offered to let servants running from the palace call to passing Trojans, who, of course, would not know what events were taking place in the castle.

The concluding lines of this scene were their supreme effort; they were determined that the last lines should be "poetry," and many and varied were the suggestions and criticisms made before this last difficulty was overcome.

The completed task was a source of great pride to the class, *all* feeling that they had worked faithfully and well. The fact that it had served to bring out the powers of the less able pupils was evidenced when one, whose work had always been below the average and whose interest, during one of the lessons, seemed centered in something upon his desk, brought up, when reprimanded for inattention, the lines:

> And I, the god of the silver bow,
> Will help thee, if thou so dost wish—

adding that he "might have gotten the other two lines," had he been left undisturbed.

LAOMEDON'S BROKEN PROMISES, OR THE REVENGE OF THE GODS

A PLAY IN TWO ACTS

Written by the pupils of the Fifth Grade (Room 1), Twenty-Seventh District School, Cincinnati, Ohio

PERSONS OF THE PLAY

Laomedon, ... King of Troy
Neptune, ... God of the Sea
Podarces, ... Son of Laomedon
Hesione, ... Daughter of Laomedon
Jupiter, ... Father of Gods
Apollo, ... God of Music, Sun, and Poetry
Hercules, ... A Hero
A Trojan.
A Stranger.
Followers of Hercules, Servants, Trojans.

ACT I—SCENE 1

Mt. Olympus—Palace of Jupiter (*Jupiter seated on his throne*), *Neptune.*

Jupiter: Thou hast tried to dethrone me, exalt thyself, and rob me of my throne and power.

Neptune: Nay, not so, great Jupiter.

Jupiter: How darest thou dispute what I and all the gods well know! Thou shalt now pay the penalty for this offense by serving a mortal, King of Troy, for one long year. (*Rises.*) Go, now, and do my bidding and come not again into my presence until thy task is completed or I will deprive thee of thy power. (*Exit Neptune, enter Apollo, with bowed head.*)

Jupiter: Knowest thou, Apollo, why I have brought thee here?

Apollo: Aye, great Jupiter, I know that I have displeased and angered thee, but grief for my beloved son has almost maddened me.

Jupiter: Thy sorrow gave thee no right to injure another. For this deed I now banish thee from Mt. Olympus and the presence of the gods to serve for a time a mortal, King Admetus. (*Exit Apollo, softly playing his lyre.*)

Apollo: Farewell to Mt. Olympus and its palaces of gold,
My chariot and its fiery steeds I now no more behold,
I see no more Aurora, fair goddess of the morn.
Once happy as the other gods, but now I am forlorn.

(*Curtain.*)

SCENE 2

The beautiful city of Troy. (*Laomedon driving slowly along in his chariot. Enter Neptune, who steps up to the chariot.*)

Laomedon: Who art thou, who darest to step so boldly up to my chariot?

Neptune: Thou knowest me not, oh, King; I am Neptune, great god of the sea. I have displeased Jupiter, our great father, and he, as punishment, has banished me from Mt. Olympus to serve thee for a year. What task shall I perform for thee?

Laomedon: Oh, great Neptune, I have long wished for walls to surround and protect my beautiful city. For mortals this would be a task of many years; but if thou wilt fulfil my desire I promise thee rich rewards.

Neptune: Be it so, Laomedon, thy wish shall be granted; soon strong walls will protect thy city. (*Curtain.*)

SCENE 3

A mountain-side. City of Troy in the distance. (*Neptune at the task of tearing a heavy stone from the mountain-side—sighing as he works.*)

Neptune: This task seems endless! Oh, were it but completed! Had I been satisfied with the power given me and not displeased great Jupiter

I might even now be in the banquet halls of the gods, feasting on ambrosia and nectar. (*Stops suddenly, listening intently.*) What heavenly sounds do I hear? The strains seem to herald the approach of Apollo. They seem to soothe my weary spirit. (*Looks eagerly in the direction from which the sounds come. Enter Apollo, playing his lyre. He slowly approaches.*)

Apollo: Greetings to thee, Neptune. Why do I see thee at this heavy task?

Neptune: I return thy greetings, fair Apollo. Thy beautiful melody comforts and cheers me. Thou knowest well that I was banished from Olympus to serve for a year the mortal, King Laomedon. To build walls around his city is the task he has set for me. It is an endless one, but rich rewards await me when it is completed.

Apollo: Knowest thou that I, too, was banished from Olympus and sent to serve Admetus, King of Thessaly? My task is finished and gladly will I help thee at thy heavy labor.

And I, the god of the silver bow,
Will help thee if thou so desire,
I can so charm the stones, in row,
They will dance to the strains of my lyre.

Neptune: Oh, Apollo, to show my gratitude to thee, thou shalt receive a portion of the rich rewards that await me, for,

I cannot enough my gratitude show,
Beautiful god of the silver bow. (*Curtain.*)

SCENE 4

Walls of Troy, showing the Scaean Gate. (*Laomedon and his attendants driving out of the Scaean Gate, admiring the walls.*)

Laomedon: What a grand structure! Such beautiful walls no mortal could have built. I now defy my strongest and fiercest enemy. My greatest foes must yield to me. (*Enter Neptune and Apollo.*) Lo! here come Neptune and Apollo. (*Salutes the gods.*) Greetings to ye, fair and noble gods. Your work has been well done and ye shall be my honored and welcome guests until the wrath of Jupiter is appeased.

Neptune: For thy offered hospitality we thank thee, but if thou wilt grant us the promised reward we will gladly depart.

Laomedon: When I made my promise to thee it was to be a reward for heavy labor. Thy work has been lightened by Apollo. Ye gods have all that can be desired; what can you want from a mortal? Beside, were ye not sent by Jupiter to serve me? Would not his wrath fall upon me were I to reward thee for a task done at his bidding?

Neptune: King of Troy, I see that thy word is not sacred to thee. As a god I will not dispute with thee, but thou shalt feel my wrath and power. (*Curtain.*)

ACT II—SCENE 1

Some years later. Sea-shore. Laomedon's daughter ready to be sacrificed. Laomedon, soldiers, and people of Troy. Stranger from a foreign shore.

Stranger (*to one of the Trojans*)*:* What mean this great gathering of sorrowing people and this beautiful maiden ready for the sacrifice?

Trojan: Knowest thou not of the dreadful sacrifice we must make every year?

Stranger: Is it a sacrifice demanded by the gods?

Trojan: Aye, stranger, and one that each year brings a great burden of sorrow to some one. Laomedon, our king, once broke a promise to the gods. For this Neptune sent up from the sea a great monster who devoured many of our people. In great fear and distress we fled to the temple, where the oracle announced that the monster would be satisfied to devour one maiden each year. To this we agreed. Each year one of our beautiful maidens has been delivered to this dreadful sea-serpent, and now the lot has fallen on beautiful Hesione, daughter of Laomedon. The king, in great sorrow, has sent out heralds to proclaim to the people that a great reward awaits the one who will slay the monster and save Hesione. (*Confusion among the people.*) But see! It is too late! Even now they are chaining Hesione to the rock and none has come to her rescue. But, lo! who comes here in such haste? Let us press forward and see. (*Enter Hercules, breathing hard. Steps up to Laomedon.*)

Hercules: Laomedon, great King of Troy, I have heard through thy heralds of thy daughter's great peril. Grant me the four immortal steeds received from King Tros and the monster shall be slain and thy daughter saved.

Laomedon: The steeds shall be yours! Save my daughter! (*Breathless silence for a few moments. Then a great cheer arises from the throng.*)

People: Honor to great Hercules! Hesione is saved! The monster is slain! (*Curtain.*)

SCENE 2

Court of Laomedon's castle. Laomedon and attendants. Hercules.

Laomedon: Thou hast the monster braved,
And my daughter, Hesione, thou hast saved.
Thou art great, a hero grand,
Would I could give thee Hesione's hand.

Hercules: For the great honor thou art willing to bestow upon me I thank thee, but the immortal steeds thou didst promise me will be a rich enough reward.

Laomedon: My anxiety for my beloved daughter was so great that it made me give a hasty promise. The horses were a gift from great Jupiter to my grandfather Tros, and I would have cause to fear the wrath of the Father of Gods were I to part with them.

Podarces: Oh, my father, if thou didst make this promise thou shouldst fulfil it.

Laomedon: No son of mine need give me advice.

Hercules: Thou hast broken thy word to me.
As to Neptune, great god of the sea,
And if the wrath of Jupiter thou dost fear,
Thy broken promise to me shall cost thee dear.

(*Curtain.*)

SCENE 3

Courtyard of Laomedon's castle. (Hercules and his followers entering the castle.) Podarces, Hesione, several servants. (Cries of distress coming from the castle. Servants fleeing from the castle.)

First Servant: Our king, Laomedon, is dead!

Second Servant: Where shall we flee for safety! Hercules in his anger has slain our noble king and all the royal family.

Trojans: To the rescue! Our king and the princes are being cruelly slain! (*Trojans press into the courtyard. Hercules appears at the castle gate with Podarces and Hesione.*) Back, Trojans! It is the great hero, Hercules.

Hercules: Trojans, ye have heard what has happened. So must all pay the penalty who break a promise to the gods. Podarces I have saved as he appealed to Laomedon to keep faith with me.

Podarces: Oh, great Hercules, what shall be our fate?

Hercules: Hesione shall remain, but thou Podarces, must leave with me. (*Hesione weeps, and kneels at Hercules' feet.*)

Hesione: Oh, Hercules, wouldst thou but hearken to my prayer to take me and leave my brother, Podarces, to rule over our beloved city of Troy.

Hercules: Thy prayer would e'en please the gods above,
As "Priam" bought back by a sister's love;
Thy brother, Podarces, here shall remain
And over the home of his fathers shall reign.

(*Curtain.*)

THE SEVENTH TO TENTH GRADES A UNIT IN MATHEMATICS

R. L. SHORT
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Since this paper is intended for educators interested in public-school work, it may be proper first to define the topic. This may be done best by giving an explanation of present conditions in our elementary and secondary courses.

The present course is: 7th and 8th grades, 1 unit; 9th grade, 1 unit; 10th grade, 1 unit. The paper is written to call attention to the defects of the course as now given and to raise the question: How may these defects be remedied?

For the past five years mathematics associations have taken up the cry for better mathematics teaching. A Professor Perry of England offered the first remedy by suggesting the teaching of physics and chemistry in algebra and the use of many measurements and experiments in the mathematics class. As a result, the disciples of this movement went up and down the land demanding correlation. But where are those disciples? You can't find them now. There was a fundamental error in the scheme. The material given the pupil to *use* in mathematics was beyond him, often beyond his comprehension. The result was, the student was so confused by the mass of new facts and new surroundings that he got no science and no mathematics.

We all teach some physics notions—it's the fashion—and a little such is well. But the teacher who tries to lead his pupil to discover and develop physics laws which cost the life-endeavor of some of the greatest intellects this world has known and to discover the equations governing those laws, certainly harms the pupil, the subject, and the cause of education.

There is a relation, a simple one, one that is easily within the grasp of every pupil, that has been entirely overlooked. With Professor Perry, I firmly believe that mathematics should not be

set off in compartments. However, I am of the opinion that the articulation must be made with *known subjects* rather than with *unknown subjects.*

In the grammar school we teach arithmetic—just arithmetic—such as has been taught in grades IV and V. So far as my observation goes there is little or no thought-work done, no development of principles, no application made. In the ninth grade we teach algebra—just algebra. No application is made; the arithmetic does not help the algebra nor does the algebra help the arithmetic; geometry is not anticipated. In grade X we teach geometry. Little or no use of algebra is made, the equation is neglected, and pure reason introduced. Arithmetic is too far in the past to get even a hearing.

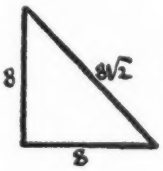
Such teaching during these four years is, to my mind, sheer waste of time. A few illustrations may strengthen the assertion. Your seventh-grade pupil, eighth-grade pupil, ninth-grade pupil, tenth-grade pupil knows nothing of the constitution of number, of the relation of numbers, of the use of number. He knows a few combinations of numbers. He knows a few rules and no *reasons why*. He may know 6·8 but when asked for 6·18 he frantically grasps a pencil or crayon. He may know the square of 32 but 16·64 is impossible without pencil and paper. He knows that $a^2 \cdot a^3 = a^5$ but he cannot tell you what power of 3 is 9·27. He will tell you that the square on the hypothenuse equals the sum of the squares on the two legs of the triangle but he cannot tell you whether the diagonal of a square whose side is 8 is 14, 15, or 16, even though he may possibly know that diagonal to be $8\sqrt{2}$. To multiply a fraction he is not quite sure whether to multiply the numerator or the denominator of the fraction by an integer, so to make certain that he does all that he should do he multiplies both. He knows the square of $a+b$ but he cannot tell you the square of $30\frac{1}{4}$. None of these defects is the fault of the child. They are chargeable directly to the teacher and to the courses offered.

Now for the remedy. A closer knitting together of arithmetic, algebra, and geometry, an articulation, if you please, of these subjects, and an understanding of principles rather than of rules will settle these troubles. For example, when your grammar-

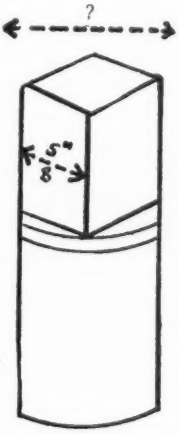
school pupil knows that $c(a+b)=ac+bc$, he should also know that $6\cdot18=6(10+8)$ and that $16\cdot17$ is also the product of a binomial and a monomial, namely $16(10+7)$. Mental arithmetic, rapid and accurate, is then possible. When your pupil knows how to write the product of $16\cdot17$, $(3x-17)(5x+16)$ needs no pencil and paper. You teach $32\cdot32=1024$, but do you teach $2^5=32$, $2^4=16$, $2^6=64$? You teach $(a^5)^2=a^{10}$, also $a^4\cdot a^6=a^{10}$. Do you teach $(2^5)^2=2^{10}=(32)^2$ and $2^4\cdot2^6=2^{10}=(32)^2=1024$?

$a^2\cdot a^3=a^5$. Does that mean to your pupil $3^2\cdot3^3=3^5$? That is, is $9\cdot27=3^5$?

$(a^2)^3=a^6$ and $\sqrt{a^6}=a^3$. Does 9^3 mean 3^6, and does $\sqrt{9^3}=\sqrt{3^6}=3^3=27$?

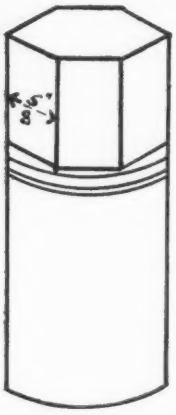


The side of a square is 8. The diagonal is $8\sqrt{2}$. Does your pupil have *any* idea of how long a line $8\sqrt{2}$ is? Does he know $8\cdot14$? Does he know that $8\sqrt{2}=8(1.4+)$?



The stock for milling machine purposes is usually cylindrical. Try your pupil on this one: A piece of iron is to be milled so that one end is a square $\frac{5}{8}''$ on a side. What size stock must be selected? (See diagram.)

The problem is simply the application of the relation between the diagonal of a square and its side.



Now put the same question to the pupil making the end hexagonal, $\frac{5}{8}''$ on one side. Have you taught him why multiplying the numerator of a fraction multiplies the fraction or did he just learn the rule? Does he know that a mixed number is a binomial and that there are two kinds—the $a+b$ and the $a-b$—or does he square $30\frac{1}{4}$ by reducing to $\frac{121}{4}$ and squaring both numerator and denominator? I would suggest that the square of a mixed number be obtained mentally by means of, say,

$$(30\tfrac{1}{4})^2=(30+\tfrac{1}{4})^2=(900+15+\tfrac{1}{16}).$$

In reducing fractions to the lowest common multiple do you permit your pupils to follow this process:

$$\frac{5}{48}+\frac{11}{36}+\frac{8}{45}+\frac{7}{54}=\frac{\quad}{2160}\ ?$$

2)	48	36	45	54
2)	24	18	45	27
3)	12	9	45	27
3)	4	3	15	9
	4	1	5	3

Or would you combine algebra and arithmetic in this manner?

$48=2^4\cdot 3$
$36=3^2\cdot 2^2$
$45=3^2\cdot 5$
$54=3^3\cdot 2$

Select for your L. C. M. each factor which appears, giving to each the highest exponent appearing in any number concerned, i. e., $2^4\cdot 3^3\cdot 5$.

$2^4\cdot 3^3\cdot 5\div 48$ is $2^4\cdot 3^3\cdot 5\div 2^4\cdot 3=3^2\cdot 5$. The first numerator is then $3^2\cdot 5^2$. Similarly the second numerator is $2^2\cdot 3\cdot 5\cdot 11$. The third numerator, $2^4\cdot 3\cdot 8$ or $2^7\cdot 3$. The fourth numerator, $2^3\cdot 5\cdot 7$.

$$\text{Then } \frac{5}{48}+\frac{11}{36}+\frac{8}{45}+\frac{7}{54}=\frac{3^2\cdot 5^2+2^2\cdot 5\cdot 11\cdot 3+2^7\cdot 3+2^3\cdot 5\cdot 7}{2^4\cdot 3^3\cdot 5}$$

$$=\frac{225+660+384+280}{2160}$$

$$=\frac{200+600+300+200+20+60+80+80+5+4}{2160},$$

all of which may be performed mentally.

Such a course will not only help the arithmetic but will be of infinite service in the manipulation of algebraic fractions and in the reduction of surd polynomials: e. g.,

$$\sqrt{(a^2-a-12)(a^2+2a-3)(a^2-5a+4)}.$$

A similar articulation and application of subjects should extend through algebra and geometry. It may necessitate some rearrangement of courses in both grammar school and high school. But is it not worth while? Will it not teach the pupil to think? Will it not give him some opportunity to estimate his answer and to know within some limit at least how nearly right he is? Will such articulation not bridge over the chasm between grammar school and high school and save some of that wholesale slaughter that now occurs in the freshman year?

It is my opinion that such course can be carefully and successfully worked out. The mathematics for college, for business, for scientific lines will then be built on the foundation laid in the third to sixth grades, will be one continuous course, the various phases of secondary mathematics being brought in naturally and as rapidly as the pupil can assimilate the material. Usable mathematics can be taught and that is the only kind of mathematics that belongs to the pupil.

EDITORIAL NOTES

We regret to state that the article in the Series upon Kindergartens, by Mrs. Alice H. Putnam on "Moral Controls in the Nursery and the Kindergarten," which should have appeared in this number, was delayed in the mail for so long a period that its appearance has been necessarily postponed until the next number. G. H. M.

The Subn rmal and Defective Child in School

No educational movement is more deserving of vigorous support than that which is now gaining headway in the effort to care properly for the subnormal and defective child. It ought to call forth the most generous financial backing and it certainly requires the very best of scientific experts for its successful prosecution. One of the most effective means for expediting such pioneer work—and pioneer work it is in most of our communities—is the intelligent demand for it by the teachers in our great school systems. Every teacher may well feel under obligation to learn something of the facts with which we are confronted and the methods thus far proposed for dealing with the situation.

A few comments on certain obvious features of the case are distinctly in place at this time.

The Presence of These Children a Seri us Injury to the School

It should be clearly recognized that the obligation which we are under to give the subnormal child special care rests quite as much upon our duty to the normal child as to the defective one. To put subnormal or defective children into the classes with normal children is often a great wrong to both. The normal child is retarded in his progress by the class necessity of keeping step and going forward abreast, while the defective child is under a strain to which he ought not to be submitted. The writer has repeatedly been in classes where it was perfectly clear that the whole tone of the grade had been sapped and debilitated by the

presence of a few very backward children to whom for various reasons the teachers felt obliged to give special attention. Children with serious nervous disorders ought never to be admitted to the regular classes. The nervous effect of such contact on highly organized but perfectly normal children is often cruelly disastrous.

The Retarded Child and the Morally Defective Should Be Separated

A sharp distinction should also be drawn between the mentally retarded and backward child on the one hand and the truant or morally defective child on the other. The moral delinquency often springs from mental defect, but the retarded child is by no means necessarily a moral delinquent and to group the backward children with the chronic "bad boys" in joint classes, as has occasionally been done, is most immoral and unjust. The retarded child is very likely to be imitative in high degree and to respond eagerly to forceful leadership. Such leadership the confirmed truant is more than willing to furnish.

Teaching of Subnormals Expensive

We must expect to pay at a higher rate for the teaching of subnormal children than for that of normals, because they require more individual attention and this means more teachers per group. But as a people we are not wont to hesitate long on the score of cost, once we have convinced ourselves that a measure is socially essential.

Wastage Involved in Neglect of These Children

Whether the training of our subnormals can best be done in separate schools or in special rooms connected with each large school is a problem depending on many circumstances which vary from locality to locality. Such questions, of which there are many, are after all of small consequence compared with the securing of an adequate number of specially trained and thoroughly devoted teachers, who will save to the community the great wastage in human happiness and human efficiency which society is now permitting through the neglect of these retarded children.

J. R. A.

NOTES AND NEWS

The first work of the Leipzig Institute for Experimental Pedagogy and Psychology is a translation of Kirkpatricks' *Fundamentals of Child-Study* under the title of *Grundlagen der Kinderforschung.* (Leipzig: A. Hahn. M. 3.50.)

Full reports of the recent meetings of the Depar ment of Superintendence of the N. E. A., and societies affiliated or connected with it, have already appeared, but it may be advantageous to emphasize here the work which is being done by the National Society of College Teachers of Education, and the National Society for the Scientific Study of Education. The former considered the problems of "Observation and Practice Teaching in College and University Departments of Education;" and while nothing startlingly new was said, yet the fact that the leaders in education from all parts of the country are pressing hard upon the practical aspects of preparation for education is, in itself, significant, and almost new. The movement to make preparation for teaching mean actual familiarity with the teaching situation, by means of observation of the best models, by practice under the criticism of the best teachers, and by theoretical consideration of the problems which arise in the student's own experience through this actual contact with real situations, is likely to grow until it completely occupies the field of the training of elementary teachers.

The second of the above-mentioned societies is continuing its work of calling attention to the moral elements involved in the school as it relates to the complete life-situation. The subject of education with relation to sex problems is becoming more insistent. It is easy enough to say that the child must be made to know; but How? and When? and What? Many periodicals are taking up this problem, more or less wisely. The work of this society ought to be in the possession of every teacher. Dr. C. R. Henderson, of the University of Chicago, long noted for his work in connection with civic morality, is the editor of the present yearbook.

Renewed attention is called to the work which a public library is able to do as an educational means in the recently published report of the New York Public Library for the year 1908. As related to the public schools, and to all schools, the work of this library is notable. It has a department devoted to work with schools, under the supervision of a competent man. In this department are a total of 411 branches which are regularly visited.

Bulletin boards have been erected in the schools of the Children's Aid Society, in parochial schools, in the Hebrew Technical Institute for Girls, in some corporate schools, and in recently completed public elementary and high

schools, to the total number of 254 in schools, colleges, and universities. On these over 7,000 library notices have been posted. To those too far from any branch for regular visits notices are sent by mail, consisting of lists of new books of interest to teachers and the announcements of various library privileges for teachers and pupils.

Special effort has been made to equip the branches with books that would be useful in connection with the reference work of the elementary and high schools. In addition to the usual works of reference, dictionaries, encyclopaedias, almanacs, atlases, and so on, a list of books has been compiled that includes all of the required reading of these schools, with books related to the courses of the various grades and departments, including almost every subject in which the average boy or girl may be interested. . . . . When these collections are complete a teacher may send any pupil to the nearest branch with the assurance that the desired book will be immediately at hand, and the boys and girls will acquire the habit of a very free use of the library. . . . . Four new children's libraries have been opened and there are now forty such libraries. The circulation of books from children's libraries in 1908 was 2,175,347. In 1907 it was 1,871,800. The increase in volume of circulation is marked by far more gratifying increase in the quality of the books circulated and the amount of actual reading reported by the children on returning their books, or at the story hours.

The *Playground* in its current number contains the following:

The Third Annual Playground Congress will be held in Pittsburgh, Pa., on May 11 to 14. Already the Local Committee on Arrangements, the Programme Committee, and the committees on special subjects are busy at work preparing an unusually strong programme and an extensive series of novel exhibits and festivals for Congress week. Carnegie Music Hall, one of the most beautiful and convenient places for gatherings in the United States, has been secured for the use of the Congress. The Exhibition features will be particularly emphasized. Winter work and activities will be shown as of interest in the present movement for the all-year work of playgrounds. Another exhibition will deal with dramatics, folk dancing, and games, while the value of music in playground work will be developed at a musical feature in which playground children will sing Italian, Russian, German, Irish, and Negro folksongs. Folk dancing also will be a special feature of the festival work. The Pittsburgh Congress, moreover, will offer an excellent opportunity to study at first hand the way in which a municipality and a private organization can co-operate successfully, for the city of Pittsburgh has placed the management of its playgrounds in the hands of the Playground Association.

The general meetings will be held in the evening. The present plan is to have fewer addresses and to place greater emphasis on exhibition features. The speakers will be men and women recognized nationally as having an important message to offer on the play question and significant data to contribute to the working-out of the great educational, physiological, and civic problems, the solution of which is believed to lie in the field of properly conducted playgrounds. The topics at the general meetings will be limited to fields which have a truly national application. Each address will deal authoritatively with some phase of the question which has a national bearing and which is significant to all classes of playground advocates. The detailed discussion of questions applicable to limited

fields will be held in connection with the special conferences and committee sessions. The reports of the special committees and the conference discussions will be each in its own field comprehensive. These committees for months past have been thoroughly canvassing their fields for all information. Each report will be a complete résumé of playground progress and discovery in all parts of the country. The chairmen of these committees report that all of their members are actively considering the problems. In addition, each committee has had the benefit of the suggestions in the field made by the entire membership of the Playground Association of America. The several committees and the chairmen who will present reports at the Congress are: Athletics for Boys, Dr. A. K. Aldinger; Equipment, E. B. De Groot; Festivals, Lillian D. Wald; Folk Dancing, Elizabeth Burchenal; Normal Courses in Play, Professor Clark W. Hetherington; Play in Institutions, Dr. Hastings Hart; Playgrounds as Social Centers, Mrs. Vladimir Simkhovitch; State Laws, Joseph Lee; Playground Statistics, Leonard P. Ayres; Storytelling in the Playground, Maud Summers.

The estimates of appropriations for the United States Bureau of Education for the fiscal year ending June 30, 1910, as transmitted to Congress, included under the general head of salaries estimates for additional employees as follows: Expert in higher education, $4,000; expert in industrial education, $3,000; expert in the welfare of children, $3,000; editor, $2,000, additional clerks, $12,100. Of the new employees requested, Congress made provision for an editor at $2,000; one clerk at $1,200; and one clerk at $1,000. The salary of the Commissioner of Education was increased from $4,500 to $5,000, making a total increase in the appropriations for the general work of the Bureau of $4,700 over the appropriations for the current fiscal year. The requests for a lump-sum appropriation of $40,000 for educational investigations; for an increase of $1,500 in the appropriation for the library; for an increase of $8,000 in the fund for collecting statistics; and of an appropriation of $39,000 for rent, metal shelving, additional furniture, and removal of the Bureau to new quarters, did not receive the favorable consideration of Congress.

The appropriation for the education of the natives of Alaska remains the same as for the present year, $200,000. The appropriation for reindeer in Alaska was reduced, on the recommendation of the Commissioner of Education, from $15,000 to $12,000. Provision was made by Congress for the designation of employees of the Alaska school service as special peace officers to assist in the enforcement of law in Alaska. It is expected that this legislation will be of great value in promoting the general welfare of the Alaskan natives.

The schoolhouse in Birr, beside which Pestalozzi lies buried, and on whose north wall hangs his memorial (1846), has been raised one story. To prevent the wall over the memorial from appearing too bare, the addition has been decorated with a fresco-painting in three parts, whose exe-

cution was undertaken by a young painter from the Aargau. The memorial has thereby lost repose to a certain extent but the impression of the whole surface is not as confusing as was feared.

In the spring of 1908 the French count, Béon, who owned "Neuhof," the home of Pestalozzi, died. In November Dr. Glaser-Lohner, an enthusiastic admirer of Pestalozzi (his father was a pupil at Hofuyl), purchased the whole area. Not speculation but reverence induced him to buy "Neuhof." The condition of affairs at "Neuhof" in the last year was a desecration of the home of the Pestalozzi charity school. Several years ago the directors of the Swedish Teachers' Association considered the matter of buying the "Neuhof," but the price, which was set at 165,000 francs, was judged by all to be too high. A training school in the spirit of Pestalozzianism, conducted on the principles of the Landerziehungsheim, would be an ideal use for the "Neuhof;" not an extensive institution, nor a money-making establishment, but a model school in the spirit of Pestalozzianism would be worthy of the place. Would it be impossible to secure the means for this purpose and to assure such a school at "Neuhof"?—*Die Deutsche Schule.*

Principal Robert L. Cooley, Sixteenth District School, No. 1, Milwaukee, has declared war on disease germs in schoolrooms in the following direct fashion:

We are all familiar with the necessity for protecting our water-supply from contamination. We gladly bear our portion of the enormous expense entailed in bringing pure water, in abundance, to our door.

We are acquainted with the necessity for pure-food legislation, and offer no objection, upon the ground of convenience, or expense, to any real safeguard to the public food-supply.

Public-school authorities have long been concerned with the problems of ventilation which deal with the forms of air-contamination involving its gaseous constituents. At great expense city schools have been equipped with large fans, operated by engines, or motors, for the positive delivery into the classroom, each minute, of a predetermined number of cubic feet of outdoor air per pupil.

Air, water, and food are further protected from contamination by carefully installed plumbing.

Have all of the necessities of public-school sanitation been met? Do we get clean air?

Dust is the great vehicle for the distribution of many pathogenic germs. The dust-evil is the greatest problem of sanitation remaining for public-school authorities to solve.

Without great care the schoolhouses become the disease-clearing-houses of the community.

Teachers and school-boards have come to regard the presence of dust in the schoolroom as a normal condition. It has seemed a hopeless thing to contend against. They are like the father who came to school to remonstrate with the principal who had sent his little girl home because of vermin in her hair.

"Everybody has them," he replied, as he insisted upon her being left undisturbed in her uncleanly condition.

Why this serene disregard of an undoubtedly grave condition?

Fire has never claimed a victim in the public schools of this city, and yet fire-escapes, at great expense, are being placed, as they should be, upon every school-building.

There is not a physician of repute, with a knowledge of conditions, who would dare to assert that deaths and serious illness have not been directly traceable to the dust in our schoolhouses.

Smallpox will throw a community into a panic. It is spectacular in its attack and effects. Cause and effect lie close together and the relation is recognized.

Tuberculosis is insidious and stealthy. The relation between cause and effect is difficult to make people understand and appreciate. Even when understood it seems to be but an intellectual appreciation, without any body of feeling back of it to give force to the conviction, and cause precautions to be taken at the expense of mere convenience.

It is so with the danger from germ-bearing dust. It performs its evil mission so stealthily and insidiously that the cause is looked for elsewhere. There is a tremendous inertia, an inherited lack of fear of this form of infection to be overcome, and a consequent disregard of proper methods of dealing with the problem.

What can teachers do? What are their responsibilities?

Let us consider some of the elements of this phase of the problem.

In any class of forty or more pupils, there are always some for whom today is the time of low resistive vitality. Not only is attendance at school compelled by law, but pale-faced, nervous, and anaemic children are daily drawn into attendance by over-stimulated pride and interest in their work. The very virtue of efficient teaching is the magnet that lures them into the schoolroom, when, for their own health, they would better be elsewhere.

Don't make a fetich of attendance.

Punctuality and regularity in attendance have been elevated among the cardinal virtues.

Concern yourself with the whole welfare of the pupil.

Establish no rewards that are absolutely cut off by a brief absence.

Acquaint yourselves with the valuable literature published by the state tuberculosis commission and assist in its understanding and distribution.

Constitute yourselves an extension of the state tuberculosis commission.

Agitate for "clean air" in the schoolroom.

Compulsory attendance at school carries with it an obligation, upon the part of the community, to maintain consistently wholesome conditions in our school-buildings. The resistive vitality of the pupil may vary from day to day, but the wholesome condition of the schoolroom must be maintained a constant factor.

Until recently no means of ridding a building of dust and dirt was known, except that of sweeping up and carrying out. By that crude method the fine, impalpable, but most dangerous, germ-infected dust was left behind to be beaten into suspension by improper methods of dusting and the tramp of many feet.

The writer of this paper, having had charge of a city school for a number of years, and having been a member of the Society for the Prevention of Tuberculosis, has been forcibly impressed with this neglected phase of schoolroom sanitation. As a result he has had ipstalled in his building of fourteen rooms, a vacuum air-cleaning plant.

The work of this plant has been so effective, the conquest of the dust-problem has been so complete, that description of what it accomplishes will be of interest to all readers of this paper.

It sweeps the schoolhouse more rapidly than can be done with brushes.

It sweeps cleaner than can be done with brush or broom.

It does away with any dusting necessitated by sweeping.

It raises no dust in the process of sweeping and dusting.

It sucks the dirt and fine dust of the schoolroom through hose and pipes into a closed receptacle in the basement where it is destroyed by fire.

It sucks dust and dirt from places inaccessible to brush or broom.

It enables the janitor to sweep at any hour of the day, when corridors or certain rooms are not in use.

It is the ideal method for cleaning a school-building after the dismissal of the pupils.

It is now mechanically perfected and is a blessing to the community.

It costs considerable money.

How much is it worth?

Government has long fought tuberculosis in cows, trichinosis in pigs, foot-rot in cattle. We are quick to avail ourselves of the teachings of science when it will increase dividends, and attention to these matters has been found to pay.

The government is likewise committed to the policy of educating our children.

If it pays for the government to educate the child, it is certainly worth its while to protect his health which alone can make that education useful later on.

Any really important problem of public sanitation will not have its solution long delayed on the grounds of expense.

We have thousands in money for defense from preventable disease, but not one life of the most humble within our city, for tribute to it.

Enlighten the public and money will flow like water.

BOOK REVIEWS

A History of Education before the Middle Ages. By FRANK PIERREPONT GRAVES, PH.D. New York: Macmillan, 1909. Pp. 304. $1.10.

This book is not of the skimmed-milk, peptonized type of elementary history of education nor does it present an abstract history of philosophy for beginning students as does Davidson's otherwise admirable work. It is also free from the petty criticisms of great educational systems and the ideas of great thinkers that are so disgusting in some histories of education.

The chief topics to be considered, according to the author, are aim, content, method, and organization of education in each nation and period considered. This plan is followed throughout but a large proportion of the space is in every case given to historical facts showing the origin of educational ideals and aims. As in all other histories of education many of the facts given, although of significance to general history, have no direct bearing upon the problem of education.

This book, like nearly all others, does not in the opinion of the present writer give sufficient prominence to the more or less unconscious and unintentional education that is given the members of each new generation through their contact with the occupations, institutions, and traditions of their people. For similar reasons the intentional teaching of the young by directing their activity in accordance with the national needs, customs, and ideals does not seem to be appreciated at its full value. It is perhaps only natural that we who have always associated education with book learning cannot fully appreciate the most valuable features of such education as that carried on by the Greeks.

The matter is well arranged in topics and the facts are presented with clearness and accuracy. Part 1 treats of non-progressive education and Part 2 of the beginnings of individualism in education. After considering education among savages and peoples of primitive civilization the author treats of education in the historical nations of Egypt, Babylonia, Assyria, Phoenicia, China, Persia, Israel, Sparta, Athens, and Rome. The last chapter treats of early Christian education.

A writer of a history of education, like the good biographer, should be primarily appreciative and only secondarily critical. This Dr. Graves is to a greater extent than many other writers, yet the good points of the systems considered might have been brought out with greater clearness. The criticism of the education of any nation should not be based on present ideals and practices as is usually the case with most writers. The true basis of criticism is the correspondence or lack of correspondence between the aims of an educational system and the means used for attaining those ends. Only when one realizes that the ideal of the people of China was not like our own, one of progress, but of preserving everything as it had been, can he appreciate how admirably suited was the old Chinese system of education for the attainment of the desired end. One of the results of the study of the history of education should be

to see more clearly the aims of modern education and judge more accurately how well our studies and methods are suited to the attaining of those ends.

Since to present clearly the historical facts that reveal education as a phase of the history of civilization is utterly impossible in a brief work designed for beginning students, it is the opinion of the present writer that the author of an introductory history of education is justified in overemphasizing the peculiarities of the ideals and practices of each nation in order to make the pictures more distinct. Dr. Graves is more careful than most such writers as to his historical facts but he fails as a literary artist in making the characteristics of each educational system stand out with sufficient distinctness to strongly impress elementary students. Considered in all respects, however, the book will rank high among histories of education.

E. A. KIRKPATRICK

FITCHBURG NORMAL SCHOOL, MASS.

The "Appleton" Arithmetics. Primary book. By J. W. A. YOUNG AND LAMBERT L. JACKSON. New York: D. Appleton & Co., 1909. Pp. 264.

"To teach arithmetic from the standpoint of the child," is the purpose this book sets itself. A broad purpose; indeed, is it very well possible in our days to *teach* anything from any standpoint, but that of the ones to be *taught?* The purpose is so broad, however, that further specification is necessary for a thorough understanding of the aim. What is the "standpoint of the child," with respect to arithmetic? Has it been clearly understood? What is there in the child's experience, that seems to call for arithmetic? In how far, or in what ways can arithmetic contribute to the unfolding and testing of the child's powers? Does it not seem necessary to answer these and many other related questions, in a somewhat definite fashion, before it can become clear, what we mean when we speak about the "standpoint of the child" with respect to arithmetic?

Perhaps the raising of these questions sends us out into terra incognita; at any rate, they open a broad field for scientific activity: to devise methods of investigation by means of which they may be adequately answered, to carry on such investigations in the classroom, and to put together manuals to be given to the children whose adaptability for arithmetic teaching we are trying to learn.

The *Appleton Arithmetics* are not intended for such purposes, however; they take for granted that the child's standpoint with respect to arithmetic is what it has generally been taken to be—eagerness to learn the fundamental processes on whole numbers and simple fractions, and their applications. They are "conservative, but not reactive. They represent what is sane in quality and safe in quantity for everyday classroom use under average conditions." They rather make fruitful use of the experience of the last ten years, then consciously try to gather new experience. They will contribute in a large fashion to bring into general application some of the things which have thus far been used by the people of advanced thought in education.

Every process, every idea is introduced by some "preparatory work," concrete in nature and intended to lead to an abstraction. Then follow, in many

instances, oral exercises, mostly abstract, and after those come written exercises in which the abstract work is dissolved in applications. Such an arrangement surely ought to work well. Only, I would like to see about five times as many exercises in the preparatory work before any abstract notion is introduced. Can we reasonably expect children in the second year to attach any meaning to an addition table such as is found on p. 5, after nine concrete exercises, all with one set of objects? Why not present at least four or five *different* concrete situations before making attempt at an abstraction? The purpose of this book is finally to enable the child to use the fundamental processes of arithmetic in *concrete* situations. Is it altogether certain, that this cannot be reached in any other way except through an ill-digested abstraction? Can such an abstraction be expected to be a good tool for the applications?

The first chapter containing subject-matter for the first two years deals with numbers through twenty; chaps. ii and iii, designed for the third year, work with numbers through one hundred and one thousand respectively; chaps. iv and v, giving the work for the fourth year, lead the child through one million and give an introduction to the operations with common and decimal fractions. The reviews are frequent and thorough. The applications to practical problems are numerous and interesting, sometimes artificial. Multiplication by any number is immediately followed by division by the same number. Could not a similar interweaving have been carried out with the other topics?

The book is clearly printed and looks very attractive. I do not know whether the illustrations are always adapted to a child's understanding.

ARNOLD DRESDEN

SCHOOL OF EDUCATION

First Course in Biology. Part I, Plant Biology; Part II, Animal; Part III, Human. By L. H. BAILEY AND W. M. COLEMAN. New York: Macmillan, 1908. Pp. 204; 224; 164. Illustrated. $1.25.

Books in so-called general biology have been added to by Professors Bailey and Coleman. This book is made up of three parts, Plant Biology, Animal Biology, and Human Biology. It is really three small courses, one on botany, one on zoölogy, and one on human physiology bound within the same covers, separately paged, the whole constituting further evidence that the term "biology" means very different things to different people. An attempt is not made to study a biological topic by use of illustrative materials from both plants and animals, including men, but rather to study characteristics of the three divisions entirely separately. Furthermore, as evidence that the authors do not conceive of the task that they have assumed as one in which biological problems are to be found primarily in a study of living plants and animals we may cite their chapter of preliminary experiments upon compounds, oxygen, and air, study of acid and alkaline substances, test for starch, for nitrogenous substances, and for fats and oils, making and liberating oxygen, etc. It would seem that these experiments in a general biological course should arise in connection with real problems associated with plants and animals.

In the first part of the book, which is given to plants without any study as to what a plant is and what it must do in order to live, the student is soon plunged into "plant societies." Throughout this part detailed leaf, stem, and flower terminology finds abundant presentation, while the real work—the excuse for existence of these things—is less prominent than is desirable.

The discussion of the principles of biology, meaning of the term, and source of energy, appears, at the beginning of the second section, no explanation being offered as to why, if this is desirable at all, it was not presented before beginning the study of plants. Following this the groups of animals are considered in the order of increasing complexity.

The section on human physiology apparently is intended to mention practically all the topics one would find in any large work upon this topic, plus the discussion of alcohol and narcotics usually found in books designed to meet the trade. From the point of view of one interested in education it would seem there is no good basis to justify so inchoate a mass of material as found in this last part of the book.

In subject-matter the book contains many things with which specialists would find fault but these will not now be recounted.

O. W. C.

Public-School Relationships. By JOHN SOGARD; with an Introduction by HOMER SEERLEY. New York: Hinds, Noble & Eldredge, 1909. Pp. xxiv+197.

Public-School Relationships is a recent book that attempts briefly to discuss from a teacher's point of view "The Community and the School Officers," "The School Authorities and the Teacher," "The Teacher and the Pupil," and "The Employment of Teachers." The school officers, who "represent either the intelligence or the indifference of the community," are, in a sense, the exponents of the opportunity that the school may possess of becoming an organic factor in the life of the community. The school-board is entitled to the respect of the community, the author claims, since directly or indirectly the community makes the school-board. In a very true sense the *personnel* and ideals of the school-board are true representatives of the ideals of the community. When most of the people of a community thoughtfully accuse a board of ignorance, negligence, or corruption, the temporarily unrepresentative board will soon be exchanged for a representative one, while commendation by a majority means in a broad way that the board already stands for the community's educational thought. The wide differences that prevail relative to the functions of the school-board are presented by the author by means of replies to a *questionnaire* upon the duties of school-boards. The replies represent the entire range from a totally inactive and innocuous board, depending entirely upon superintendent and teacher, through a condition represented by a board that regards its functions as ending with attention to the material side of the schools, to one which looks upon the superintendent and teacher as hirelings to do the bidding of an over-functioning board.

In "The Teacher and the Pupil" some excellent educational philosophy is presented of which a single illustration may here be given. Mr. Sogard has

investigated the question of amount of attention and time that shall be given to the "slow" pupils and here presents results of his inquiry. Although some teachers continue to believe that "while there is life there is hope" and consequently that they should seek the lost one even if the ninety and nine may meanwhile stray considerably, fortunately many teachers are discovering that it is quite as important to urge to his limit the exceptionally strong pupil, as to consume an undue proportion of time in trying to pull up a backward pupil until he reaches a respectable average.

The section on "Employment of Teachers" contains much valuable suggestion for superintendents, school-boards, and communities. O. W. C.

BOOKS RECEIVED

AMERICAN BOOK CO., NEW YORK

Standard Songs and Choruses for High Schools. By M. F. MacConnell. Cloth. Pp. 256. $0.75.

Nineteenth-Century English Prose. By Thomas H. Dickinson and Frederick W. Roe. Cloth. Pp. 495. $1.00.

D. APPLETON & CO., NEW YORK

The "Appleton" Arithmetics: Grammar-School Book. By J. W. A. Young and L. L. Jackson. Cloth. Pp. 450.

HOUGHTON, MIFFLIN & CO., BOSTON

A Primer of Nursery Rhymes. By Leota Swem and Rowena Sherwood. Cloth. Illustrated. Pp. 124. $0.30.

THE MACMILLAN COMPANY, NEW YORK

Beginners' Botany. By L. H. Bailey. Cloth. Illustrated. Pp. 208. $0.60.

Two Years Before the Mast (Pocket Series). By Richard Henry Dana. Edited by Homer Eaton Keyes. Cloth. Pp. 412. $0.25.

PRIVATELY PUBLISHED

Freehand Perspective and Sketching. Principles and Methods of Expression in the Pictorial Representation of Common Objects, Interiors, Buildings, and Landscapes. By Dora Miriam Norton. Illustrated. Pp. 172. Published by the author, Pratt Institute, Brooklyn, N. Y.

CURRENT EDUCATIONAL LITERATURE IN THE PERIODICALS[1]

IRENE WARREN
Librarian, School of Education, The University of Chicago

ADDAMS, JANE. The reaction of modern life upon religious development. Relig. Educa. 4:23–30. (Ap. '09.)

AYRES, LEONARD P. Irregular attendance a cause of retardation. Psycholog. Clinic. 3:1–9. (15 Mr. '09.)

BAGLEY, WILLIAM C. The pedagogy of morality and religion as related to the periods of development. Relig. Educa. 4:91–107. (Ap. 09.)

BAWDEN, WILLIAM T. Outline of a one-year course in mechanical drawing for high schools. Man. Train. Mag. 10:334–37. (Ap. '09.)

BENSON, ARTHUR CHRISTOPHER. The personality of the teacher. Educa. R. 37:217–31. (Mr. '09.)

BREED, MARY BIDWELL. The private boarding house. Relig. Educa. 4:60–65. (Ap. '09.)

BRISTOL, GEORGE P. Foreign languages in the high school. Educa. R. 37: 243–52. (Mr. '09.)

BRYCE, JAMES. Religion and public education. Relig. Educa. 4:30–34. (Ap. '09.)

BURKS, JESSE D. Need for a comprehensive restatement of educational theory. School R. 17:244–55. (Ap. '09.)

CAMPBELL, W. H. The value of industrial training in the elementary schools. Educa. Bi-mo. 3:285–98. (Ap. '09.)

CANFIELD, JAMES H. The library's part in education. Pub. Lib. 14:120. (Ap. '09.)

CARY, C. P. Proposed changes in the accrediting of high schools. School R. 17:223–30. (Ap. '09.)

CLARK, F. H. The influence of the report of the committee of seven on history work in the high schools. Educa. R. 37:331–42. (Ap. '09.)

[1] Abbreviations: Amer. Educa., American Education; Amer. Phys. Educa. R., American Physical Education Review; Atlan., Atlantic Monthly; Atlan. Educa. Journ., Atlantic Educational Journal; Educa., Education; Educa. Bi-mo., Educational Bi-monthly; Educa. R., Educational Review; El. Sch. T., Elementary School Teacher; Journ. of Geog., Journal of Geography; Liv. Age, Living Age; Man. Train. Mag., Manual Training Magazine; Prog. Journ. of Educa., Progressive Journal of Education; Psycholog. Clinic, Psychological Clinic; Pub. Lib., Public Libraries; Relig. Educa., Religious Education; School R., School Review; South. Educa. R., Southern Educational Review.

CLARK, LOTTA A. A good way to teach history. School R. 17:255-67. (Ap. '09.)

COE, GEORGE ALBERT. Annual survey of progress. Relig. Educa. 4:7-23. (Ap. '09.)

COLLINS, JOSEPH V. Religious education and the Sunday school. Educa. R. 37:271-84. (Mr. '09.)

COVERT, PAUL W. A college credit course in machine shop. Man. Train. Mag. 10:289-99. (Ap. '09.)

DEWEY, JOHN. History for the educator. Prog. Journ. of Educa. 1:1-5. (Mr. '09.)

"DOMINIE." A problem for boys' boarding schools. Educa. 29:453-60. (Mr. '09.)

ELIOT, CHARLES W. Educational reform and the social order. School R. 17:217-23. (Ap. '09.)

EMERSON, HENRY P. The English elementary school system. Amer. Educa. 12:358-62. (Ap. '09.)

FENNEMAN, N. M. Problems in the teaching of physical geography in secondary schools. Man. Train. Mag. 10:145-58. (Ap. '09.)

GILLETTE, JOHN M. Preparation of the college student for social service. Relig. Educa. 4:74-83. (Ap. '09.)

GREENE, FRANCES NIMMO. State support for library extension. South. Educa. R. 5:219-28. (D.-Ja. '08-'09.)

GREENWOOD, James M. Retardation of pupils in their studies and how to minimize it. Educa. R. 37:342-49. (Ap. '09.)

HADLEY, ARTHUR T. The library in the university. Pub. Lib. 14:115-17. (Ap. '09.)

HORN, P. W. City schools under the commission form of city government. Educa. R. 37:362-75. (Ap. '09.)

HOUSE, R. T. A neglected phase of practical education. Educa. 29:447-50. (Mr. '09.)

HUGHES, RICHARD CECIL. Factors in the dormitory problem. Relig. Educa. 4:47-51. (Ap. '09.)

JEWELL, AGNES. The public library and the school problem. Pub. Lib. 14:117-19. (Ap. '09.)

JOHNSON, GEORGE E. The playground as a factor in school hygiene. Psycholog. Clinic. 3:14-21. (15 Mr. '09.)

JOHNSTON, CHAS. Tutoring law-makers. Harp. W. 53:15. (27 Mr. '09.)

KARPINSKI, LOUIS C. Reform in the teaching of mathematics. School R. 17:267-72. (Ap. '09.)

KEOGH, ANDREW. The training of college students in bibliography. Pub. Lib. 14:124. (Ap. '09.)

KING, CHARLES A. The public school and industrial education. Educa. 29: 407-19. (Mr. '09.)

KINNE, HELEN. Some phases of household arts in the secondary schools, Man. Train. Mag. 10:307–13. (Ap. '09.)

MCANDREW, WILLIAM. The schoolman's dismissal. Educa. R. 37:252–71. (Mr. '09.)

MCCURDY, PERSIS HARLOW. The history of physical training at Mount Holyoke college. Amer. Phys. Educa. R. 14:138–51. (Mr. '09.)

MACDOWELL, THEODORE L. An outline of a plan for utilizing the salary schedule as a means for improving the efficiency of teachers in the elementary schools. Educa. R. 37:349–59. (Ap. '09.)

MANNY, FRANK A. Notes on English education. Atlan. Educa. Journ. 4:15–16. (Mr. '09.)

MARTIN, GEORGE H. A lesson from medical inspection of schools. Psycholog. Clinic. 3:9–14. (15 Mr. '09.)

MERIAM, J. L. Fundamentals in the elementary school curriculum. Educa. R. 37:390–99. (Ap. '09.)

PEABODY, FRANCIS GREENWOOD. The social conscience and the religious life. Relig. Educa. 4:1–7. (Ap. '09.)

PINE, JOHN. The origin of the University of the State of New York. Educa. R. 37:284–92. (Mr. '09.)

PRICE, HELEN U. Possibilities for work with children in smaller libraries. Pub. Lib. 14:121–23. (Ap. '09.)

REINSCH, PAUL S. The new education in China. Atlan. 103:515–23. (Ap. '09.)

ROSS, E. ATHELSTAN. The influence of the teacher on the child's interests. Man. Train. Mag. 10:313–17. (Ap. '09.)

RUEDIGER, WILLIAM C. Teaching pupils to study. Educa. 29:437–47. (Mr. '09.)

ST. JOHN, G. B. Rating of constructive work. Man. Train. Mag. 10:331–34. (Ap. '09.)

SANFORD, E. M. The origin, function and direction of play. Amer. Educa. 12:345–52. (Ap. '09.)

SCHNEIDER, OTTO C. The hand as a factor in education. Educa. Bi-mo. 3:278–85. (Ap. '09.)

SCHROEDER, H. H. The religious element in the public schools. Educa. R. 37:375–90. (Ap. '09.)

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